

AMENDMENTS TO THE CLAIMS

Please amend Claims 23, 31 and 37 as indicated below. Please also add new Claims 38-40.

Claims 1-22 (Canceled).

23. (Currently amended): A method for controlling battery power comprising the acts of:

selectively providing a first external power source or a second external power source to a device coupled to a system power terminal;

coupling an internal battery to the system power terminal via a series-connected bi-directional transistor;

charging the internal battery by linearly regulating the bi-directional transistor with a linearly adjustable voltage at a control terminal of the bi-directional transistor to conduct a charging current in a first direction from the system power terminal to a positive battery terminal during a charging mode; and

discharging the internal battery by linearly regulating the bi-directional transistor with the linearly adjustable voltage at the control terminal of the bi-directional transistor to conduct a discharging current in a second direction from the positive battery terminal to the system power terminal during a discharging mode, wherein the level of current provided to the internal battery during the charging mode or current supplied by the internal battery during the discharging mode varies with the level of the linearly adjustable voltage at the control terminal of the bi-directional transistor.

24. (Original): The method of Claim 23, further comprising the acts of:
sensing a supply current from the second external power source; and
linearly adjusting the charging current to prevent the supply current from exceeding a predefined threshold.

25. (Original): The method of Claim 23, wherein the impedance of the bi-directional transistor varies to limit the level of the charging current or the discharging current.

26. (Original): The method of Claim 23, wherein the impedance of the bi-directional transistor varies inversely with the discharging current level during the discharging mode.

27. (Original): The method of Claim 23, wherein the charging mode occurs when the voltage on the system power terminal is greater than the voltage of the internal battery.

28. (Original): The method of Claim 23, wherein the discharging mode occurs when the voltage on the system power terminal is less than the voltage of the internal battery.

29. (Original): The method of Claim 23, wherein the discharging mode occurs in response to a discharge command.

30. (Canceled).

31. (Currently amended): A method of controlling battery power, the method comprising:

selectively providing an external primary power source and an external secondary power source to a system power terminal of a device with an internal battery;

coupling the internal battery to the system power terminal using a bi-directional transistor with a control terminal; and

driving the control terminal with a linearly adjustable voltage to regulate current conducted by the bi-directional transistor to charge the internal battery during a charging mode and to discharge the internal battery during a discharging mode, wherein the level of current provided to the internal battery during the charging mode or current supplied by the internal battery during the discharging mode is determined by the level of the linearly adjustable voltage at the control terminal of the bi-directional transistor.

32. (Previously presented): The method of Claim 31, wherein the bi-directional transistor disconnects the internal battery from the system power terminal during a sleep mode.

33. (Previously presented): The method of Claim 31, wherein the external primary power source is an AC adapter and the external secondary power source is a USB power interface.

34. (Previously presented): The method of Claim 31, wherein the external secondary power source is automatically disconnected when the external primary power source is connected.

35. (Previously presented): The method of Claim 31 further comprising:
sensing current supplied by the external secondary power source to generate a current sensed signal;

comparing the current sensed signal to a threshold value; and
generating an overriding signal to the control terminal of the bi-directional transistor to limit a charging current to a predefined level.

36. **(Previously presented):** The method of Claim 31, wherein the bi-directional transistor is a field effect transistor and the control terminal is a gate terminal.

37. **(Currently amended):** The method of Claim 31, wherein the bi-directional transistor is a P-channel MOSFET with a configurable body contact, the configurable body contact is coupled to the system power terminal during the charging mode, and the configurable body contact is coupled to the internal battery during the discharging mode.

38. **(New):** The method of Claim 37, further comprising using a comparator with inputs coupled across the bi-directional transistor to sense a voltage polarity of the bi-directional transistor and an output to control connections for the configurable body contact.

39. **(New):** The method of Claim 37, wherein the configurable body contact connects to a channel terminal with a relatively higher voltage during a shutdown mode to prevent current flow in a body diode and thereby fully disconnecting the internal battery from the system power terminal.

40. **(New):** The method of Claim 23, wherein the bi-directional transistor fully disconnects the internal battery from the system power terminal during a disable mode.